REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1-9.

The above amendment is responsive to the objection to the abstract.

Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Remy (U.S. 6,224,884).

Claims 8-9 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Remy '884.

Further, claims 1-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Tada et al. WO 98/27021 (translated in U.S. 6,379,776).

Lastly, claims 8-9 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tada '776.

These rejections are respectfully traversed.

Regarding the citation of Remy (U.S. 6,224,884) (reference A), it discloses a process for producing titanium oxide comprising hydrolyzing a titanium compound and heating the mixture, which contains water, at 80-100°C, followed by drying to produce anatase titania, as stated in the rejection.

In regard to the citation of Tada et al. (U.S. 6,379,776) (reference B), it discloses a method for making titania comprising hydrolyzing a titanium compound and then further reacting with water at 10°C to the boiling point in order to form an anatase titania coating.

However, the present invention is unobvious from references A and B on the following points:

Reference A states that the compound is heat-treated at a temperature preferably of at least 300°C, more preferably at a temperature ranging from 400 to 800°C, and still more preferably from 500 to 700°C, for an adequate length of time to calcine the compound, i.e. to obtain an at least partially crystalline titanium oxide which will have the desired photochromic properties.

Reference B teaches that titanium oxide is heat-treated at 450 to 650°C for ten minutes to two hours in order to improve the densification and crystallization of titanium oxide.

Thus, in order to form anatase titania, titanium oxide requires heat treatment at a high temperature.

On the other hand, the present invention enables the production of anatase titania or a composite oxide containing anatase titania at a low temperature, i.e. very mild conditions compared with that in the related art, by forming a gel containing a metal oxide from a solution containing at least a hydrolyzable titanium compound and then allowing the gel containing the metal oxide to react with water.

The present invention having these characteristics has been achieved by the discovery that a product prepared by hydrolysis and polycondensation of a hydrolyzable titanium compound acquires densification and crystallization by contact with hot water of 100°C or below, etc., contrary to the conventional practices and the discovery that the addition of an organic polymer to the gel promotes the deposition of anatase crystals by treatment with the hot water.

The molecules of hot water attack the hydrolysis-polycondensation product from the hydrolyzable titanium compound to promote the dissociation of a bond with another oxide, the condensation of a TiO_2 component, nucleation, and the growth of nuclei, and thereby, the formation of anatase titania is realized at a very mild temperature of 100°C or below.

The organic polymer added to the solution containing at least a hydrolyzable titanium compound acts to control the specific surface area and pore of the resulting metal oxide and to promote the deposition of an anatase crystalline phase.

These features are neither disclosed nor suggested by the prior art.

For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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